DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-0079-01(042) Coffee
P.I. No.: 431830
SR 135/Perimeter Road Widening

OFFICE: Engineering Services

DATE: September 17, 2009

FROM: Ronald E. Wishon, Project Review Engineer REW

TO: Bobby Hilliard, PE, State Program Delivery Engineer
Attn.: Jeremy Busby

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held July 20-23, 2009. Responses were received on September 1, 2009. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
T-1	Save 6 ft of section width by not providing for the future 20 ft median from Sta. 158+25 to Sta. 245+51	Proposed = $1,124,000 Actual = $864,718	Yes	This will be done. The original design includes a 14 ft flush median with an extra six feet of striped out pavement to accommodate a future 20 ft raised median. The VE recommendation is to eliminate the 6 ft of extra pavement and utilize the 14 ft flush median now and in the future. Design year traffic volumes (14,100 in 2013 and 19,100 in 2033) are within the range for a flush median (maximum 24,000 VPD). This section of the project is more rural in nature, without significant commercial development. Future development is not anticipated. The VE report assumed greater ROW savings than will actually occur. Bridge savings have also been adjusted.

T-2	Plan for a future 18 ft wide median instead of 20 ft median for the entire length of the project	Proposed = $319,679 Actual = $72,060	No	The corridor consists of two unique sections. From the beginning of the project to McDonald Road/Old Axson Road, the area is more developed and traffic volumes are higher. This section has been designed as an urban section, with a 20 ft raised concrete median. After the McDonald Road/Old Axson Road intersection, the area is mostly rural and traffic volumes decrease. This section has been designed as an urban section with a 14 ft flush median, with 6 ft of additional pavement so a future 20 ft raised median can be installed. Traffic volumes vary in the raised median section of the project. At the beginning of the project, the build year (2013) traffic is 19,200 and the design year (2033) traffic is 25,950. From US 441 to McDonald Road/Old Axson Road the build year traffic varies from 18,300 to 17,300 and the design year traffic varies from 24,950 to 23,400. The majority of these volumes meet the criteria for a raised concrete median to be constructed now. After the McDonald Road/Old Axson Road intersection, the traffic counts drop dramatically and a 14 ft flush median will be used now and in the future. There is no need for a future raised median in this area. (See T-1.) Business owners who attended the PIOH were opposed to a raised median, citing concerns about u-turning trucks and loss of local customers. Using an 18 ft median would reduce the raised concrete area between the turn lanes and opposing traffic to 1 ft. With mountable curb, vehicles may be inclined to attempt crossing the median into commercial driveways rather than traveling to the next median opening. If this concrete was removed and striped hatched areas were used instead, drivers could attempt to cross the striped areas. Cost savings are reduced due to implementation of T-1 and T-3.

T-3	Use a rural section in lieu of an urban section from Sta. 158+25 to Sta. 237+00	Proposed = $524,497 Actual = $914,900	Yes	This will be done, and the rural section will be extended to the end of the project (Sta. 245+51). This section of the project consists primarily of large, undeveloped tracts of land and some light industrial areas. Approximately 69% of the parcels in this area are commercial, 22% are undeveloped properties, and 9% are residential. Current development on this section of the corridor does not generate significant pedestrian traffic. This section is more rural in nature, without significant commercial development. There was no evidence of worn footpaths in the grass shoulders during site visits. Future development is not anticipated; however, if development should occur, the City could require the developer to add curb and gutter and sidewalk.
T-4	Use 11 ft through lanes on SR 135	$613,592	No	The 24 hour truck traffic is considerably high (18%) in this urban arterial corridor.
T-5	Use 11 ft inside lanes and 12 ft outside lanes on SR 135	$306,800	No	The 24 hour truck traffic is considerably high (18%) in this urban arterial corridor.
T-6	Use 12 ft shoulders in lieu of 16 ft shoulders throughout the project	Proposed = $1,267,049 Actual = $103,512	Yes	This will be done; however, much of the savings has been incorporated into the implementation of T-3.
B-1	Save 12 ft of bridge width by providing an 8 ft wide raised median on the new bridge in lieu of providing for a future 20 ft median	Proposed = $411,539 Actual = $482,529	Yes	This will be done.
B-2	Save 6 ft of bridge width by providing a 14 ft wide flush median on the new bridge in lieu of providing for a future 20 ft median	$193,619	No	B-2 cannot be done because B-1 will be implemented.
B-3	Coordinate a construction window with CSX RR for girder replacement during new bridge construction	Design Suggestion	Yes	This will be done.

B-4	Construct a bridge for realigned Old Bell Lake Road East in lieu of providing a quadruple 10 x 7 box culvert	(-$12,760) Cost increase	No	B-4 cannot be done because G-6 will be implemented.
D-1	Use HDPE pipe in lieu of concrete pipe for longitudinal storm drain piping	$116,755	No	The soil survey was completed after the VE Study was held. It requires additional Type 2 Foundation Backfill Material around the HDPE pipes, which would result in an additional cost of $361,492.
CG-1	Use 24 in wide curb and gutter in lieu of 30 in wide curb and gutter	$68,370	No	Approximately 26 additional drainage structures will be required if this recommendation is implemented. This would result in an additional cost of $76,607, negating any savings.
CG-2	Eliminate curb and gutter from McDonald Road and Old Axson Road	$9,384	No	The original design already includes a rural section for these side roads.
CG-3	Eliminate curb and gutter, sidewalk and associated drainage from Baker Highway	Proposed = $48,448 Actual = $16,959	Yes, with modifications	Existing Baker Highway west of SR 135 has existing curb and gutter without sidewalk. The proposed design included sidewalk since current policy is to add sidewalk wherever there is curb and gutter. Based on the VE Study recommendation, the design will be changed to eliminate the proposed sidewalk; however the proposed curb and gutter and drainage will remain since they are replacing existing items that will be removed during construction. Within the project limits, this section of Baker Highway consists of wetlands and large undeveloped tracts. Other than a gas station located at the intersection of SR 135 and Baker Highway, there are no businesses to support pedestrians. Existing and proposed Baker Highway east of SR 135 utilizes a rural section; there is no proposed curb and gutter or sidewalk to remove. The proposed savings have been reduced to show removal of the sidewalk from Baker Highway west of SR 135 only.

S-1	Eliminate sidewalk on the east side of SR 135 between Gaskin Avenue (Sta. 123+25) and the end of the project (Sta. 245+50)	Proposed = $218,159 Actual = $402,207	Yes, with modifications	Because of the implementation of recommendation T-3, the only urban section is from Sta. 104+45 to Sta. 158+25. Due to proposed development in this area (movie theater, restaurant and shopping center) and its proximity to existing subdivisions, sidewalk should remain. Removing the sidewalk on both sides of the road in the rural section from Sta. 158+25 to the end of the project will result in greater savings than originally proposed by the VE Study.
S-2	Reduce the shoulder width from 16 ft to 12 ft and eliminate the sidewalk on the east side of SR 135 between Gaskin Avenue (Sta. 123+25) and the end of the project (Sta. 245+50)	Proposed = $779,667 Actual = $0	Yes	The savings for this recommendation have been included in recommendations T-6 and S-1.
G-1	Use striping to mark islands at intersections in lieu of providing raised concrete islands	Proposed = $112,090 Actual = $130,732	Yes, with modifications	By implementing T-3, some of the islands will be reduced in size. The US 411 intersection will require raised islands for pedestrian safety since there are 8 lanes for pedestrians to cross. A few other islands will remain, but wherever possible concrete islands can be removed.
G-2	Cul-de-sac Old Bell Lake Road West and provide Parcel #40 driveway access at Sta. 169+90	Proposed = $217,531 Actual = $91,286	Yes, with modifications	If the City of Douglas approves the closure of Old Bell Lake Road West, this recommendation will be implemented (with slight modifications from what was proposed by the VE Study.)
G-3	Make W. Forest Drive a right-in/right-out with a traffic island to improve traffic flow	Proposed as a Design Suggestion Actual = $4,426	Yes	This will be done.
G-6	Realign Old Bell Lake Road East to eliminate the need for a box culvert	Proposed = $488,480 Actual = $441,183	Yes	This will be done. The cost savings was changed based on more accurate calculations for ROW and pavement.

G-7	Tie in Old Bell Lake Road East and West at the existing intersection in lieu of providing the proposed new alignment	$673,345	No	Since G-2 and G-6 will be implemented, G-7 cannot be done.

Additional information was provided by email on September 3, 14, and 16, 2009.

The Office of Engineering Services concurs with the Project Manager's responses.

Approved: _____ **Date:** 9/24/09
Gerald M. Ross, PE, Chief Engineer

REW/LLM
Attachments
c: Genetha Rice Singleton
Paul Liles/Bill Duvall/Bill Ingalsbe/Judy Meisner
Bobby Hilliard/Mike Haithcock/Jeremy Busby
Paul Alimia
Joe Cowan
Ken Werho
Lisa Myers
Matt Sanders

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE STP00-0079-01(042) Coffee
PI No.: 431830
SR 135 / Perimeter Rd. Widening

OFFICE Program Delivery

DATE September 1, 2009

FROM Jeremy T. Busby for
Bobby Hilliard, P.E.,
State Program Delivery Engineer

TO Ronald E. Wishon, Project Review Engineer
Attention: Lisa Myers, Design Review Engineering Manager/VE Coordinator

SUBJECT **VALUE ENGINEERING STUDY – FINAL REPORT RESPONSE**

Below are the responses to the Value Engineering Study conducted on July 20-23, 2009 for the above referenced project. Each comment was studied and developed by both the Department's Project Manager and the Consultant's Project Manager to reach an agreed upon response.

SR 135/Perimeter Rd. Widening in Douglas

ROADWAY:

Value Engineering Typical Section Alternative No. 1 – Save six feet of section width by not providing for the future 20-ft-wide median from Sta. 158+25 to Sta. 245+51.

COMMENTS: The recommendation of using a 14-foot flush median in lieu of a 20-foot future median (without raised concrete) from Sta. 158+25 to Sta. 245+51 will produce a sizable reduction in construction costs. The VE calculations included the entire project corridor rather than the listed station ranges. In addition, the VE calculations assumed that the ROW and easements would shift inward by 6 feet due to 6 feet less of asphalt. However, the proposed ROW was based primarily on creating a uniform ROW, varying from 150' to 180'; therefore, the ROW and easement changes due to this VE alternate are significantly less. The new construction cost savings would be $563,629 versus the estimated $1,124,000 from the VE study. These construction cost savings include the reduction in the bridge width, which is Bridge Alternate B-2. However, we are recommending utilizing Bridge Alternate B-1 with this alternate for an additional savings of $301,089, which would create a total construction cost savings of $864,718.

(We recommend the implementation of this design alternative in conjunction with Bridge Alternate B-1).

Value Engineering Typical Section Alternative No. 2 – Plan for an 18-ft-wide median in lieu of a 20-ft-wide median the entire length of SR 135 within the project limits to save 2 feet of section width.

COMMENTS: The recommendation of utilizing an 18-ft wide median in lieu of a 20-ft wide median for the entire length of SR 135 has been reviewed and evaluated. In the proposed roadway design, the left turn lanes are 12-ft wide where raised concrete medians are used. These 20-ft raised medians are comprised of a 12-ft left turn lane, two 2.5-ft curb and gutter sections, and a 3-ft wide raised concrete area. Using an 18-ft wide median would reduce the raised concrete area from 3-ft to 1-ft, which may become a hazard. With mountable curbs (Type 7) around the raised concrete median and a narrower overall width, vehicles would be more inclined to attempt crossing the concrete median into commercial driveways rather than traveling to the next median opening to make a U-turn. It would be similar to crossing a speed bump. In contrast, if the concrete median was removed from the design where left turn lanes are required, then the proposed design would have a 6-ft wide hatched area for the length of the left turn lane, which is at least 200 feet in length. This would also cause problems because drivers would cross the hatching to turn into commercial and residential driveways. This in turn is dangerous because the design doesn't control the turning movements, which is the primary reason for a raised concrete median.

(We do not recommend the implementation of this design alternative).

Value Engineering Typical Section Alternative No. 3 – Use a rural section in lieu of an urban section from Sta. 158+25 to Sta. 237+00.

COMMENTS: The recommendation to use a rural section in lieu of an urban section from Sta. 158+25 to Sta. 237+00 has been reviewed. Extending the rural section to the end of the project (Sta. 245+51) will create a greater construction cost savings than presented in the VE study with the elimination of additional curb and gutter, sidewalk, and closed drainage system. Although the proposed ROW will remain in-between 150 feet and 180 feet for a uniform ROW, some areas may require additional easements for construction and maintenance of slopes. In addition, this alternate will allow for commercial development as it grows along this corridor to not have to tear out infrastructure for right turn lanes, and allow the developers to construct curb and gutter, sidewalks, and closed drainage systems within their development footprint. This recommendation will provide a construction cost savings of $914,900 versus the estimated $524,497 from the VE study. The primary items that contributed to the cost savings difference are extending section to end of project, additional drainage pipes (36", 48", 60"), additional flared end sections (30" and 36"), additional valley gutters, additional earthwork, additional ROW, additional side drain pipes (18" and 24"), and additional safety end sections (18" and 24").

(We recommend the implementation this design alternative contingent upon above comments).

Value Engineering Typical Section Alternative No. 4 – Use 11-ft-wide through lanes in lieu of 12-ft-wide through lanes on SR 135.

COMMENTS: Reducing the proposed lane widths on the through lanes of SR 135 has been reviewed and considered. With the 24-HR truck traffic at 18% in this urban arterial corridor, using narrower lanes could potentially create more hazards because drivers tend to leave a bigger gap to their sides if a truck is present. This can result in increased sideswipes with other vehicles and curbs. In addition, most of the side roads will need to be redesigned because left turning vehicles will impact the stop bars and hence the turn lanes on the side roads. Each side road will need to be extended proportionally to keep the proposed turn lane storage because the stop bars will shift away from SR 135. If extended, then each of these side roads may also need to be re-evaluated by Environmental for the special studies because of the wider project impact. Also, several raised concrete islands at the intersections will need to be removed due to truck turning movements. And finally, most of the raised concrete medians will be impacted by left turning vehicles from the side roads, causing the turn lanes and tapers to be redesigned.

(We do not recommend the implementation of this design alternative).

Value Engineering Typical Section Alternative No. 5 – Use 11-ft-wide inside through lanes in lieu of 12-ft-wide inside through lanes on SR 135.

COMMENTS: Reducing the inside through lane to 11-feet has been evaluated and considered. The truck turning movements will cause the raised medians and stop bars to shift, creating shorter turn lanes in some cases and redesigns at all median openings. Some of the left turn bays will not meet the minimum required lengths and therefore will require design exceptions. In addition, the remaining left turn lanes on SR 135 will need to be redesigned because the left turning vehicles from all of the side roads will cross the proposed mainline stop bars.

(We do not recommend the implementation of this design alternative).

Value Engineering Typical Section Alternative No. 6 – Use 12-ft-wide shoulders in lieu of 16-ft-wide shoulders throughout the project.

COMMENTS: The recommendation for the utilization of a 12-foot urban shoulder rather than a 16-foot shoulder throughout the project limits has been reviewed. Although GDOT policies recommend a 16-foot urban shoulder, the Design Policy Manual section 6.6 states that a 12-foot urban shoulder may be used. When this alternate is utilized with Typical Section Alternate T-3, the construction cost savings are greatly reduced. The new construction cost savings for this alternate will be $103,512 versus the VE study's projected savings of $1,267,049 due to only utilizing this alternate from Sta. 104+45 to Sta. 158+25. Alternate T-3 (10' rural shoulders) will be utilized from Sta. 158+25 to Sta. 245+51. The combined construction cost savings for Alternate T-3 and T-6 will be $1,018,412.

(We recommend the implementation of this design alternative contingent upon above comments).

BRIDGE:

Value Engineering Bridge Alternative No. 1 – Save 12 ft of bridge width by providing an 8-ft-wide median on the new bridge in lieu of providing for a future 20-ft-wide median.

COMMENTS: Reducing the bridge median width from 20-feet to 8-feet produces a sizable construction cost savings in ROW, earthwork, concrete median, pavement, curb and gutter, as well as with bridge costs. The proposed savings will be $482,529 versus the VE study's projected savings of $411,539. The savings difference comes from reduced ROW, concrete median, and curb and gutter.

(We recommend the implementation of this design alternative).

Value Engineering Bridge Alternative No. 2 – Save 6 ft of bridge width by providing a 14-ft-wide median on the new bridge in lieu of providing for a future 20-ft-wide median.

COMMENTS: The recommendation of saving 6-feet of bridge width by providing a 14-foot median rather than a 20-foot median has been reviewed. Because of the recommendation of B-1, this alternate becomes redundant and will not be used.

(We do not recommend the implementation of this design alternative because it conflicts with design alternative B-1, which we recommend implementing).

Value Engineering Bridge Design Suggestion No. 3 – Coordinate a construction window with CSX Railroad for girder placement during new bridge construction.

COMMENTS: Coordination with CSX railroad has begun. However, CSX has stated that they will coordinate with The Department only during the construction phase for girder placement because their train times vary widely, they require their own flagger onsite as well as GDOT's flagger to make sure construction proceeds without disruption to the trains, and they stated that it was against Homeland Security policy to provide train schedules.

(We recommend the implementation of this design suggestion based on the above comments).

Value Engineering Bridge Alternative No. 4 – Construct a bridge for realigned Old Bell Lake Road East in lieu of providing a quadruple 10-ft by 7-ft bridge box culvert.

COMMENTS: The recommendation of constructing a bridge rather than a bridge box culvert on the realigned Old Bell Lake Road east has been reviewed and considered. Rather than recommending this alternate, we are recommending General Design Alternate G-6, which keeps Old Bell Lake Road east on its existing alignment with a button hook to tie into SR 135. This will produce the greatest construction cost savings and remove the need for a structure.

(We do not recommend the implementation of this design alternative because it conflicts with design alternate G-6, which we recommend implementing).

DRAINAGE:

Value Engineering Drainage Alternative No. 1 – Use HDPE pipe in lieu of rigid concrete pipe for longitudinal storm drain piping.

COMMENTS: The recommendation to use HDPE pipe in lieu of concrete storm drain pipe has be evaluated. All pipes were analyzed to determine which ones could be replaced with HDPE and which ones needed to remain concrete and metal. In addition, this office received the approved soil survey after the VE study was completed, which required additional materials in various locations. Based on this report, many of the areas where storm drain pipes are required have a high water table. This has resulted in requiring additional Type 2 Foundation Backfill Material around the HDPE pipes, and consequently, reduced the construction cost savings immensely. Also, the Department does not have pay item numbers set up for HDPE pipe at this time, however if the pay items are developed by the time this project goes to FFPR, then utilizing HDPE is a possibility. The VE projected cost savings were $116,755, but with the additional cost of foundation backfill material required for HDPE pipe in inundated areas with high water tables, the potential cost savings may not be realized in this particular situation. Also, there are additional construction concerns with the placement of pipes in the high water tables, which may require pumps to prevent floating pipes, which may result in a more difficult construction process. The projected construction costs for utilizing HDPE pipe for this project is $361,492, which does not present a savings.

(We do not recommend the implementation of this design alternative).

CURB AND GUTTER:

Value Engineering Curb and Gutter Alternative No. 1 – Use 24-in-wide curb and gutter in lieu of 30-in-wide curb and gutter.

COMMENTS: The recommendation of using 24" curb and gutter in lieu of 30" curb and gutter has been reviewed and evaluated. Although the VE study shows a construction cost savings of $68,370 for this alternate, this cost was only based on replacing the curb and gutter. In addition, there will be additional preliminary engineering costs to redesign the proposed drainage areas, structure locations, drainage profiles for the longitudinal systems, cross sections, and plan view. Also, the study did not evaluate the gutter spread to determine the

additional required structures along the corridor. Using the smaller gutter section, which reduces the gutter spread, will require approximately 26 additional drainage structures at a cost of $76,607. In addition, with SR 135 having a high truck percentage, there is a potential for additional maintenance costs for the narrower curb and gutter if these vehicles drive over them. For instance, the wider gutter section spreads the additional load over a bigger area, reducing the failure rate. Also the narrower gutter section will separate from the edge of pavement more so than the wider section due to rotation on the outside of the section when a truck travels over the curb and gutter. And finally, GDOT Standard 9032B as well as the Design Policy Manual Section 6.5.3 state that 2.5-feet is the standard width for curb and gutter, therefore a design variance would be required to use the smaller curb and gutter.

(We do not recommend the implementation of this design alternative).

Value Engineering Curb and Gutter Alternative No. 2 – Eliminate curb and gutter from McDonald Road and Old Axson Road.

COMMENTS: The original proposed design already included a rural section on McDonald Road and Old Axson Road, therefore, there is no curb and gutter that will need to be eliminated.

(We do not recommend the implementation of this design alternative based upon above comments).

Value Engineering Curb and Gutter Alternative No. 3 – Eliminate curb and gutter, sidewalk, and associated drainage from Baker Highway.

COMMENTS: The recommendation to eliminate curb and gutter, sidewalk, and associated drainage from Baker Highway has been reviewed and considered. Baker Highway to the west of SR 135 has existing curb and gutter without sidewalk, whereas, Baker Highway to the east of SR 135 has an existing rural shoulder. Because the proposed design on the east side of Baker Highway is already a rural section, removal of these items from the proposed design is redundant. For the west side of Baker Highway, the proposed design will be changed to eliminate the proposed sidewalk from both sides of the roadway, however, the proposed curb and gutter and drainage will remain, as these items are replacing existing items that will be removed during construction. This variation of the recommendation will provide a construction cost savings of $16,959 versus the estimated $48,448 from the VE study.

(We recommend the implementation of a portion due to a variation of this design alternative contingent upon above remarks).

SIDEWALK:

Value Engineering Sidewalk Alternative No. 1 – Eliminate sidewalks from the east side of SR 135 between Gaskin Avenue (Sta. 123+25) and the end of the project (Sta. 245+50).

COMMENTS: This recommendation to eliminate sidewalks from the east side of SR 135 between Gaskin Avenue and the end of the project has been reviewed and evaluated. Because design alternate T-3 (10' rural shoulders) has been recommended from Sta. 158+25 to the end of the project, the only urban section is from Sta. 104+45 to Sta. 158+25. Our recommendation is to leave the urban section with sidewalks on both sides, primarily because a new movie theater, a new Sonic restaurant, and a new shopping center are located within this area as well as numerous subdivisions. The rural section from Sta. 158+25 to the end of the project will not have sidewalk on either side. Therefore, the additional cost savings are due to removing sidewalks from both sides of SR 135 rather than just one side from Sta. 158+25 to the end of the project, resulting in a total construction cost savings of $402,207 versus the VE study's $218,159.

(We recommend the implementation of a variation of this design alternative contingent upon above comments).

Value Engineering Sidewalk Alternative No. 2 – Reduce the shoulder width from 16-ft-wide to 12-ft-wide and eliminate sidewalk on the east side of SR 135 from Gaskin Avenue (Sta. 123+50) to the end of the project (Sta. 145+50).

COMMENTS: This recommendation of reducing the shoulder width from 16-feet to 12-feet and eliminate sidewalk on the east side of SR 135 from Gaskin Avenue to the end of the project has be reviewed and considered. Reducing the shoulder width has already been evaluated and recommended in design alternate T-6. In addition, our recommendation of design alternate S-1 will render this alternate redundant. Therefore, the construction cost savings with this alternate will be $0 versus the VE study's $779,667 primarily because these savings have already been included in design alternate T-6 and S-1.

(We recommend the implementation of a variation of this design alternative contingent upon above comments).

GENERAL:

Value Engineering General Alternative No. 1 – Use striping to mark all islands at intersection in lieu of providing raised concrete islands.

COMMENTS: The recommendation to use striping to mark all islands at intersections rather than raised concrete has been analyzed and evaluated based on truck turning movements. By using design alternate T-3, which provides rural sections for most of the project corridor, some of the islands have been reduced in size. In addition, the intersection with US 441 will require

the raised concrete islands for pedestrian safety, as the proposed design includes 8 lanes for pedestrians to cross (2 NB, 2 SB, dual left turn lanes, right turn lane, and right turn flare into a right turn lane for a driveway). Gaskin Avenue is already pedestrianized, but trucks turning right onto Gaskin Avenue require the islands in the SW and NE corner to be removed. The island in the NW corner of McDonald Road will need to remain, but the other 3 corners can be removed. The islands at the intersection with Ward St./ SR 32 are proposed to have extremely large islands due to the less than desirable skew angle, therefore, these two islands will be reduced in size, but need to remain for separation of travel lanes. Keeping these two islands will also be beneficial for when the intersection becomes pedestrianized in the future as the area grows. All other raised concrete islands can be removed. Based on the above exceptions, the construction cost savings for this alternate are $130,732 versus $112,090 from the VE study.

(We recommend the implementation of this design alternative with the above mentioned exceptions).

Value Engineering General Alternative No. 2 – Cul-de-sac Old Bell Lake Road West and provide Parcel #40 a driveway access at Sta. 169+90.

COMMENTS: The recommendation to cul-de-sac Old Bell Lake Road west has been reviewed and evaluated. The existing intersection with Old Bell Lake Road west and SR 135 has a skew angle of approximately 54 degrees, 51 minutes, which is substandard. The traffic counts on this leg of Old Bell Lake Road also indicate that 175 vehicles are turning southbound onto SR 135, 75 vehicles are turning northbound onto SR 135, and minimal vehicles are traveling across SR 135 onto the other leg of Old Bell Lake Road. If this roadway was to be closed, then the additional traffic would remain on McDonald Road and approach the intersection of McDonald Road and SR 135. With the additional traffic placed on McDonald, the proposed design based on this alternate would add a right turn lane onto McDonald Road onto SR 135. The VE study provided a driveway to Parcel #40 on new location, but to increase construction cost savings, we have shifted the driveway to utilize the old roadbed for Old Bell Lake Road west. Also, a barricade, berm, and signage would need to be used at the end of the cul-de-sac to keep vehicles from proceeding onto the Bar-B-Que parking lot. This alternate would require presentation to the City of Douglas personnel, as well as a public information meeting and approval of the City Commissioners. This recommendation is contingent upon the City of Douglas agreeing to close Old Bell Lake Road west. The construction cost savings for this alternate are $91,286 versus $217,531 from the VE study.

(We recommend the implementation of this design alternative contingent upon above comments).

Value Engineering General Design Suggestion No. 3 – Make W. Forest Drive a right-in/right-out with a traffic island to improve traffic flow.

COMMENTS: This design suggestion has been reviewed and studied. W. Forest Drive is within 285 feet of the intersection with SR 32/Ward Street at SR 135 and 480 feet of the intersection with US 221/Westgreen Road at SR 135. With its proximity to major intersections, W. Forest Drive should be converted to a right-/right-out roadway. The approximate cost associated with this design is $4,426.

(We recommend the implementation of this design alternative).

Value Engineering General Alternative No. 6 – Realign Old Bell Lake Road East to eliminate the need for a bridge box culvert.

COMMENTS: The recommendation to realign Old Bell Lake Road east to eliminate the need for a bridge box culvert will produce a sizable construction cost savings, as well as preserve the existing wetlands in the vicinity of the original proposed alignment. The construction cost savings are projected to be $441,183 versus $488,480 from the VE study. The cost savings difference is primarily due to more accurate calculations on proposed ROW and pavement.

(We recommend the implementation of this design).

Value Engineering General Alternative No. 7 – Tie Old Bell Lake Road East and West at the existing intersection in lieu of providing the proposed new alignment.

COMMENTS: The design alternate to tie Old Bell Lake Road east and west at their existing locations have been reviewed and are not recommended, as alternates G-2 and G-6 are recommended and conflict with this alternate.

(We do not recommend the implementation of this design alternative based upon above comments).

Myers, Lisa

From: Busby, Jeremy T.
Sent: Monday, September 14, 2009 7:20 PM
To: Myers, Lisa
Subject: PI#431380 Coffee VE Recommendation T3

Lisa,
On this project the VE study recommended rural shoulders from STA 158+25 to STA 237+00, eliminating sidewalk. We agree with this recommendation, and believe rural shoulders can be extended to STA 245+51, because current develop on this section of the corridor does not generate significant pedestrian traffic. The section of the corridor is more rural in nature, without significant commercial development.

We believe that this is a good cost saving measure since significant pedestrian is nonexistent and future development is not anticipated at this time.

Let me know if you need anything else. Thanks.

Jeremy T. Busby, PE
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Additional information from design consultant and Project Manager:

From STA 158+00 to the end of the project there are some commercial properties on several acres. The attached a spreadsheet shows each parcel type, with/without buildings, and acreage starting from STA 158+00 going to the end of the project, only along the mainline.

Over half of these properties have more than 2 acres (53%), 42% of the ***commercial*** properties are non-developed (no buildings, lots, etc.), 9% of all the parcels are residential (not including apartment complexes), 20% of the parcels are residential houses and/or apartment complexes, 22% of the parcels are unknown types (grass and/or wooded), 69% are known as commercial, and all the commercial properties with buildings have an average of 4.36 acres per lot. The main locations with smaller lots are at the end of the project near SR 32 and on both sides of the railroad track. To verify what the aerial layouts show, the design Consultant looked on Google Maps for Douglas GA and verified that little additional development has occurred.

The traffic counts on SR 135 just north/east of McDonald/Old Axson (STA 158+00 towards the end of the project) are 14,100 (2013) and 19,100 (2033). The counts drop consistently from there to the end of the project: 8700 (2013) and 11,900 (2033). These numbers don't require a future 20 ft median, but require a 14 ft flush median, which is what has been proposed. The project was overdesigned (for the future 20 ft raised median) because of the potential for growth, but since the project started in early 2006, there has been minimal growth - a Sonic restaurant, a movie theater, and a few stores next to the theater. This area of growth is also south of McDonald/Old Axson (STA 158+00), which is in the area that has been designed with urban shoulders and 20 ft raised median.

Approximately 69% of the parcels from STA 158+00 to the end of the project are commercial, 22% are undeveloped and 9% are residential. If development should occur in this area in the future, the City and/or GDOT Access Manager could require the developer to add curb and gutter and sidewalk. The design consultant saw no evidence of worn footpaths in the grass shoulders during site visits in this area. Worn footpaths were visible from Gaskin Avenue south/west to US 441, which is in the highly developed area of the project, where the urban typical with sidewalks will be used.

The traffic counts on Baker Highway range from 4950 to 5450 for 2013 and from 6750 to 7350 for 2033. Baker Highway is an alternate route to leave downtown Douglas. It extends to the southeast to tie into Albany Hwy/S. GA Pkwy, which continues to Waycross. There are numerous subdivisions to the north and south of SR 135 on Baker Highway, but within ¼ mile of the intersection with SR 135, there isn't enough development to generate pedestrians. The only commercial property that may serve pedestrians is the gas station on the corner of SR 135 and Baker Highway. The other 3 parcels in this area are a real estate office, a car lot and an auto parts store. There are no retail stores, restaurants, large chain stores (like Lowe's and Wal-Mart), entertainment (bowling, movies, skating), or fast food restaurants. There is no existing sidewalk on Baker Highway.

From Sta. 158+00 to the end of project

PI No
431830
Coffee

Type of property	building	acreage
commercial	yes - BBQ & farm	6.25
commercial	yes - old farm	6.93
commercial	no - church owned	3.40
commercial	yes - portable sheds for sale	13.36
commercial	no - old farm fields	25.81
commercial	no - old farm fields	3.83
commercial	yes - apt. complex w/drive only on mainline	7.72
commercial	yes - used car sales lot	2.80
commercial	yes - house for home sales	2.95
commercial	yes - gas station	0.73
commercial	yes - commercial sales	8.49
commercial	yes - commercial sales	6.03
commercial	yes - apartment complex	7.32
commercial	no - grass & woods	3.31
unknown	no - wooded	3.38
commercial	yes - car sales & machine sales 2 bldgs	4.15
commercial	yes - parts sale	1.04
commercial	no - mostly wooded	2.06
unknown	no - purchase of old roadbed ROW	0.80
unknown	no - purchase of old roadbed ROW	0.27
commercial	yes - daycare	0.58
residential	yes - behind old rdbed, but access off side road	0.58
unknown	no - all grass	0.99
commercial	yes - row houses for low income	0.63
commercial	yes - row houses for low income	0.58
residential	yes - but house access off side road	0.55
commercial	yes - city's water treatment plant	11.00
unknown	no - has pond and wetlands adjacent to RR	4.82
unknown	no - was old pecan orchard	20.15
commercial	yes - veterinary clinic	1.25
commercial	yes - unknown what business	1.32
commercial	yes - unknown what business	1.31
commercial	yes - storage units	2.12
commercial	yes - unknown what business	3.00
commercial	yes - apartment complex	13.51
residential	yes - wooded with historic family graveyard	14.84
unknown	no - grass	0.57
unknown	no - grass	1.71
commercial	yes - city's water tower	1.01
unknown	no - grass	8.13
commercial	yes - car wash	0.55
unknown	no - woods, creek	0.79
commercial	no - grass area owned by City	0.26
residential	yes - but house access off side road	0.44
commercial	no - owned by City	0.84
	total number of parcels =	**45**
	total acreage aligning mainline =	**202.15**
	average acreage per parcel =	**4.49**
	number of parcels with more than 2 acres =	**24**
	number of parcels with less than 2 acres =	**21**
	number of commercial parcels without buildings =	**17**
	number of commercial properties w/ buildings =	**24**
	number of residential properties (w/o apts) =	**4**

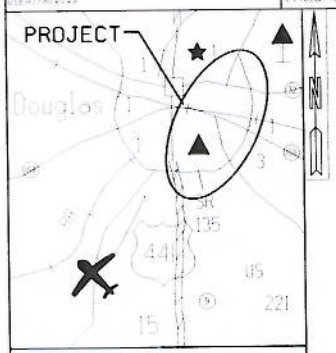
COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
COFFEE	STP-079-1(42)	1	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PLAN AND PROFILE OF PROPOSED
WIDENING OF SR 135 FROM SR 31-US 441 EAST TO SR 32, INCLUDING RAILROAD SEPARATION

COFFEE COUNTY
STP-079-1(42)

Georgia D.O.T., P.I. No. 431838
FEDERAL ROUTE = U.S. 221
STATE ROUTE No. 135



LOCATION SKETCH
(NTS)

PROJECT NO. STP-079-1(42), COFFEE COUNTY

NOTE: THE CO-ORDINATES LISTED ARE GA. EAST ZONE GRID CO-ORDINATES BASED ON THE GA. STATE PLANE CO-ORDINATE SYSTEM OF:
HORIZONTAL DATUM = NAD 83
VERTICAL DATUM = NAVD 88

BEGIN PROJECT
STA 99+50.00
N 541799.74
E 441994.61

TO BETHEL

STA 107+55.25 SR135
PI STA 300+00.00 SR31/US441

STA 123+25.70 SR135
STA 325+00.00 S GASKINS AVE

STA 141+95.22 SR135
STA 350+00.00 BRANTLEY BLVD

STA 148+85.01 SR135
STA 360+00.00 WYA DRIVE

STA 156+25.23 SR135
PI STA 380+00.00 McDONALD RD
PI STA 380+00.00 OLD AXSON RD

STA 169+90.39 SR135
STA 400+00.00 OLD BELL LAKE RD W

STA 177+04.46 SR135
STA 405+00.00 OLD BELL LAKE RD E

STA 187+04.99 SR135
STA 435+00.00 SR158

STA 451+51.50 WALDROUP AVE
STA 460+00.00 WOOD VALLEY DR

STA 207+24.87 SR135
STA 450+00.00 CENTURY DR
STA 450+00.00 WALDROUP AVE

STA 222+58.86 SR135
STA 530+00.00 NEW FRONTAGE ROAD

STA 520+75.66 NEW FRONTAGE ROAD
STA 470+00.00 SPOONER ROAD

REQ'D 252.00' X 86.42'
REINF. CONC. BRIDGE
BEGIN BRIDGE STA 211+97.00
END BRIDGE STA 214+19.00

STA 240+72.25 SR135
STA 585+00.00 W FOREST DR

STA 237+87.48 SR135
STA 550+00.00 SR32/W WARD ST

END PROJECT
STA 245+51.62 SR135
STA 600+00.00 WESTGREEN HWY
N: 549858.12
E: 449065.41

TO HUFFER

MIDPOINT COORDINATE
STATION 172+50.81
N: 543276.6953
E: 448819.9917

THIS PROJECT IS LOCATED 100% IN COFFEE COUNTY AND CONGRESSIONAL DISTRICT 1.

PROJECT DESIGNATION = EXEMPT
RDP CLASSIFICATION = MAJOR
FUNCTIONAL CLASSIFICATION = PRINCIPAL URBAN ARTERIAL

SCALE IN FEET
0 600 1200 2400

NOTE:
ALL REFERENCES IN THIS DOCUMENT, WHICH INCLUDES ALL PAPERS, WRITINGS, DOCUMENTS DRAWINGS, OR PHOTOGRAPHS USED, OR TO BE USED IN CONNECTION WITH THIS DOCUMENT, TO "STATE HIGHWAY DEPARTMENT OF GEORGIA", "STATE HIGHWAY DEPARTMENT", "GEORGIA STATE HIGHWAY DEPARTMENT", "HIGHWAY DEPARTMENT", OR "DEPARTMENT" WHEN THE CONTEXT THEREOF MEANS THE STATE HIGHWAY DEPARTMENT OF GEORGIA MEAN, AND SHALL BE DEEMED TO MEAN THE DEPARTMENT OF TRANSPORTATION.

THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS, OR IN ANY WAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND THE DEPARTMENT OF TRANSPORTATION IN ANY WAY. THE ATTENTION OF THE BIDDER IS SPECIFICALLY DIRECTED TO ARTICLES 102.04, 102.05, AND 104.03 OF THE SPECIFICATIONS OF THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, FOR THE CONSTRUCTION OF ROADS AND BRIDGES, CURRENT EDITION, AND ANY MODIFICATIONS THEREOF, WHICH WILL BE A PART OF THIS CONTRACT.

ALL WORK TO BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS OF THE DEPARTMENT OF TRANSPORTATION OF GEORGIA, CURRENT EDITION, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.

DESIGN DATA:		
TRAFFIC A.D.T. YEAR 2013:		18,800
TRAFFIC A.D.T. YEAR 2033:		24,950
TRAFFIC D.H.V.:		1930
DIRECTIONAL DIST.:		
EB /NB:	49 %	
WB /SB:	51 %	
% TRUCKS:	14.6 %	
% 24 HR. TRUCKS:	18.0 %	
SPEED DESIGN:	45 MPH	

LENGTH OF PROJECT	COUNTY NO. 079
	MILES
NET LENGTH OF ROADWAY	2.714
NET LENGTH OF BRIDGES	0.051
NET LENGTH OF PROJECT	2.765
NET LENGTH OF EXCEPTIONS	0.000
GROSS LENGTH OF PROJECT	2.765

PLANS PREPARED BY
COLUMBIA ENGINEERING
2763 Meadow Church Road, Suite 100
Duluth, Georgia 30097
Phone (770) 925-0357
Fax (770) 925-0505

DATE	STATE	DESIGN ENGINEER
DATE		CHIEF ENGINEER
LOCATION AND DESIGN APPROVAL DATE		
PLANS COMPLETED DATE		

REVISION DATES:

COVERS

PRECONSTRUCTION STATUS REPORT FOR PI:431830-

PROJ ID : 431830-
COUNTY : Coffee
LENGTH (MI) : 2.72
PROJ NO.: STP00-0079-01(042)
PROJ MGR: Busby, Jeremy
AOHD Initials: MAH
OFFICE : Program Delivery
CONSULTANT: Turnkey Consultant, (Contract with GDOT)
SPONSOR : GDOT
DESIGN FIRM: Columbia Engineering

SR 135 FM SR 31/US 441 EAST TO SR 32 INCLUDING RR SEPARATION

MPO: Not Urban
TIP #:
MODEL YR :
TYPE WORK: Widening
CONCEPT: ADD 5R(MED 14)
PROG TYPE: Reconstruction/Rehabilitation
Prov. for ITS: N
BOND PROJ :

DOT DIST: 4
CONG. DIST: 1
BIKE: N
MEASURE: E
NEEDS SCORE: 5
BRIDGE SUFF:

MGMT LET DATE : 07/15/2013
MGMT ROW DATE : 07/15/2010
BASELINE LET DATE: 07/30/2013
SCHED LET DATE : 11/19/2013
WHO LETS?: GDOT Let
LET WITH :

LATE START	LATE FINISH	TASKS	ACTUAL START	ACTUAL FINISH	%
		Concept Development	7/10/2006	4/24/2008	100
		Concept Meeting	1/17/2008	1/17/2008	100
		PM Submit Concept Report	3/26/2008	3/26/2008	100
		Receive Preconstruction Concept Approval	4/3/2008	4/11/2008	100
		Management Concept Approval Complete	**4/15/2008**	**4/24/2008**	**100**
9/25/2009	12/17/2009	Revise or Re-validate Approved Concept			0
	10/6/2009	Value Engineering Study	1/2/2008		85
		Public Information Open House Held	9/6/2007	9/6/2007	100
	2/4/2010	**Environmental Approval**	**1/4/2007**		45
11/6/2009	12/31/2009	Pub Hear Held/Comm Resp (EA/FONSI, GEPA)			0
		Mapping	12/7/2006	7/11/2007	100
		Field Surveys/SDE	7/13/2007	2/15/2008	100
	1/28/2010	**Preliminary Plans**	**3/24/2008**		54
		Preliminary Bridge Design	8/9/2009	8/13/2009	100
	1/28/2010	Underground Storage Tanks	6/18/2009		72
9/25/2009	1/7/2010	404 Permit Obtainment			0
2/26/2010	2/26/2010	PFPR Inspection			0
3/1/2010	7/30/2010	R/W Plans Preparation			0
8/2/2010	**9/30/2010**	**R/W Plans Final Approval**			0
4/6/2010	4/8/2010	L & D Approval			0
10/1/2010	9/23/2013	R/W Acquisition			0
3/23/2011	4/5/2011	Stake R/W			0
		Soil Survey	6/9/2009	8/3/2009	100
9/25/2009	11/24/2009	Bridge Foundation Investigation			0
4/9/2010	**5/9/2011**	**Final Design**			0
6/2/2010	3/8/2011	Final Bridge Plans Preparation			0
8/30/2011	8/31/2011	FFPR Inspection			0
9/14/2011	9/27/2011	Submit FFPR Responses (OES)			0

PROGRAMMED FUNDS

Activity	Approved	Proposed	Cost	Fund	Status	Date Auth
PE	2003	2003	337,725.38	L240	AUTHORIZED	2/5/2003
PE	2003	2003	3,432,849.52	Q20	AUTHORIZED	2/5/2003
ROW	2009	2014	9,786,262.62	L200	PRECST	
CST	LR	LR	34,965,852.05	L200	PRECST	

PE Cost Est Amt:	337,725.38	Date:	
PE Cost Est Amt:	3,432,849.52	Date:	
ROW Cost Est Amt:	6,521,000.00	Date:	4/24/2008
CST Cost Est Amt:	21,466,000.00	Date:	4/28/2008

STIP AMOUNTS

Activity	Cost	Fund
PE	0.00	Q20
PE	0.00	L240
ROW	100,000.00	L200
CST	0.00	L200

PDD:
Bridge: WEI 08/03/09 CONSUL - JJ&G 100%P.L. - 0% F.P.
Design: COLUMBIA ENG - PRELIM. PLANS
EIS: EA Apvd 04/07/09| OnSchdROWJuly 2010| Alimia 06/19/09
LGPA: NOTIFICATION LETTER SENT TO DOUGLAS 4-21-05.
Programming: ADDED BY SHIP COMMITTEE ON 9-17-96|#1 11-05|#2 6-06|#3 6-08|#4 5-09|#5 6-09
Traffic Op: SEND PLANS FOR REVIEW FOR PFPR|10/31/05$?
Utility: EST.SUB. 02/05/04;OCD SUE:Tk2,C11
EMG: FLY6427/06;PHOTOS TO OCD 8-1-06;D=CONSULT(COLUMBIA ENG)

District Comments

ADT: 18300 (2013), 24950 (2033)

PE PROJ NO.: PESTP007901042

(1) INITIAL CONCEPT MTG 9-30-04
(2) Design revisions from VE Study

Prel. Parcel CT: 117
Under Review:
Released:
Total Parcel in ROW System:
Options - Pending:
Condemnations- Pend:
Cond. Filed:
Relocations:
Acquired:
Acquired by: DOT
Acquisition MGR:
R/W Cert Date:
DEEDS CT: